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FOR

LINER

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LINER**CROSS REFERENCE TO RELATED APPLICATION**

[0001] This application is a continuation of co-pending U.S. Patent Application No. 60/410,939, filed September 16, 2002.

FIELD

[0002] The embodiments disclosed herein relate generally to liners.

BACKGROUND

[0003] There are a variety of situations in which a child or infant must be placed in a seating device that is provided by an establishment for re-use by numerous children throughout a single business day. For example, shopping carts in grocery stores and high chairs or booster seats in restaurants are some typical devices that can be re-used by a number of children on any given day. This can be problematic in that children, and especially infants, often put things in their mouth or suck on their surroundings.

[0004] This behavior can be problematic if children that have previously occupied the seating device contaminated the seating device with bacteria or viruses that can be passed on to other children. Various seat liners have been used to combat this problem. However, each of the currently known seat liners suffers from certain drawbacks.

[0005] For example, the devices disclosed in U.S. Patent Nos. 5,967,606 and 6,129,148 are generally disc-shaped, which could result in an uncomfortable bunching and/or stretching (e.g. overly tight areas) of material in certain areas where the child occupant is sitting. The device

disclosed in U.S. Patent No. 5,238,293 (i) has a complicated design that could be difficult and costly to produce; (ii) could be difficult to place in a seating device; and (iii) is only designed to be used in conjunction with metallic shopping carts, which eliminates the possibility that the device could be used in conjunction with non-metallic high chairs and/or booster seats.

DESCRIPTION OF THE DRAWINGS

[0006] Various embodiments are illustrated by way of example and not by way of limitation in the figures of the accompanying drawings in which like references indicate similar elements. It should be noted that references to "an," "one," "the," "other," "another," "alternative," or "various" embodiments in this disclosure are not necessarily to the same embodiment, and such references mean at least one.

[0007] **Figure 1** is a front perspective view of one embodiment of a seat liner.

[0008] **Figure 2A** is a view of the internal side of the back portion of the seat liner of **Figure 1** taken along line 2-2.

[0009] **Figure 2B** is a view of the external side of the back portion of the seat liner of **Figure 2A**.

[0010] **Figure 2C** is an alternative embodiment of the internal side of the back portion of a seat liner.

[0011] **Figure 3** is a view of the internal side of the front portion of the seat liner of **Figure 1** taken along line 3-3.

[0012] **Figure 4** is a front perspective view of an alternative embodiment of a seat liner.

[0013] **Figure 5A** shows the seat liner of **Figure 1** disposed within the seating area of a shopping cart.

[0014] **Figure 5B** shows the seat liner of **Figure 4** disposed within the seating area of a shopping cart.

[0015] **Figure 6** is a flow chart for a method of using a seat liner to protect a person from contaminants.

[0016] **Figure 7** shows a perspective view of a handle with a contaminant shield placed thereon.

[0017] **Figure 8** shows one embodiment of a contaminant shield for a handle.

[0018] **Figure 9** shows the internal side of an alternative embodiment of a contaminant shield for a handle.

[0019] **Figure 10** shows the external side of the contaminant shield of **Figure 9**.

DETAILED DESCRIPTION

[0020] The following description and the accompanying drawings provide examples for the purposes of illustration. However, these examples should not be construed in a limiting sense as they are not intended to provide an exhaustive list of all possible implementations.

[0021] Referring now to **Figure 1**, one embodiment of a seat liner is shown. Specifically, seat liner 20 includes bottom portion 22, upon which a person (e.g., a child or infant) can sit. Although it is most likely that the embodiments disclosed herein would be used for a child or infant, it is also contemplated to create the embodiments with dimensions suitable for other applications in which occupants of all sizes and ages could, for example, use the various embodiments to protect them from contaminants and/or to provide cushioning to a seating device.

[0022] In one embodiment, an edge of back portion 24 is coupled to an edge of bottom portion 22. Right side portion 26 and left side portion 28 are each have an edge that is coupled to an edge of bottom portion 22 and to an edge of back portion 24, respectively. An edge of front portion 30 is coupled to an edge of bottom portion 22 and to an edge of right side portion 26 and to an edge of left side portion 28, respectively. In one embodiment, each of the portions are coupled to each other so that the angle between each of the portions is substantially perpendicular so that the seat liner will have an overall box shape.

[0023] The techniques used to representatively couple the various portions of the seat liner together depend, in part, on the type of material used for each of the various

portions. Such coupling techniques can include, for example, stitching, hook-and-loop fasteners, and adhesives. In another embodiment, seat liner 20 includes integral portions such that one or more of the various portions comprise a single piece of material folded to define the box shape described above.

[0024] In various embodiments, each of the various portions of the seat liner can have any suitable construction including, for example, foam and/or foam rubber covered in a stain-resistant cloth. In order to improve durability, the various portions can be quilted together with the quilting having spacing sufficient to keep the filler material in a localized region to prevent bunching of the material after prolonged use and/or after washing and drying the seat liner.

[0025] In the embodiment shown in **Figure 1**, the top of seat liner 20 is left open. Front portion 30 includes leg openings 34 suitable for the legs of a child or infant to pass through leg openings 34. Although two small leg openings 34 are shown, it is contemplated that any number (including only one) and size of leg openings 34 may be used to accommodate the number and size of children placed in seat liner 20.

[0026] **Figure 1** also shows leg protectors 36 that hang below leg openings 34. Leg protectors 36 advantageously provide protection for the legs of the occupant, who may swing their legs back and forth while seated.

[0027] Left side portion 28 also includes pocket 32, which may be used to hold items such as, for example, a shopping list, keys, etc. while an occupant is sitting

within seat liner 20. In the embodiment shown, pocket 32 is disposed on an external surface (e.g., not in contact with occupant) of seat liner 20 so that the occupant cannot easily access pocket 32 and the contents within pocket 32. In another embodiment, the pocket can be disposed on the internal side of one of the various portions of the seat liner such that the occupant can easily access items (e.g., food, drink containers, snacks, etc.) within the pocket.

[0028] In various embodiments, one or more of the various portions of seat liner 20 can be joined to other portions by zippers, or any other easily releasable mechanism (e.g., hook-and-loop fasteners, etc.), so that one or more of the various portions can be laid flat so that seat liner 20 can be used as a liner to protect the occupant while changing the occupant's diaper on a potentially contaminated surface. In the embodiment shown in **Figure 1**, dashed lines are used to represent back portion 24 in an open position (see reference character 25) to protect the occupant during a diaper change.

[0029] Back portion 24 includes seat belt openings 44 so that a seat belt of a device (e.g., shopping cart, high chair, booster seat, etc.) can be threaded through seat belt openings 44 and secured around the occupant. In an alternative embodiment, seat liner 20 can include its own seat belt. **Figure 2A** shows the internal side of back portion 24 in isolation and illustrates that more than one set of seat belt openings 44 may be used in order to provide a greater range of adjustability depending on the size of the occupant and the location of the seat belt of the device relative to seat belt openings 44.

[0030] **Figure 2B** shows the external side of back portion 24 in isolation. Besides seat belt openings 44, loop 46 is provided so that when seat liner 20 is folded for storage or transportation, strap 38 of **Figure 1** can be fed through loop 46 and fastened back onto strap 38. For example, strap 38 can employ a hook-and-loop fastener system for convenience. Specifically, distal end 40 of strap 38 can include a series of hooks while proximal end 42 of strap 38 can include a series of loops so that when strap 38 is fed through loop 46, distal end 40 can be joined with proximal end 42 to secure seat liner 20 in a collapsed position.

[0031] In various embodiments, a strap can be used to carry seat liner 20 in a collapsed position. For example, Figure 1 shows strap 31 attached to left side portion 28 for transporting seat liner 20. The dimensions and configuration of strap 31 can be adjusted based on whether strap 31 will be used to carry seat liner 20 over the shoulder or by hand.

[0032] **Figure 2C** shows an alternative embodiment of the internal side of a back portion in isolation. For example, back portion 25 includes seat belt sleeves 48. Seat belt sleeves 48 can include an opening similar to seat belt openings 44 of **Figure 2A** so that a seat belt of a device can be fed through seat belt sleeves 48, which can aid in preventing an occupant from mouthing a seat belt that numerous other prior occupants may have contaminated. Although two seat belt sleeves 48 are shown, any number of seat belt sleeves can be used. Moreover, although seat belt openings 44 and seat belt sleeves 48 are shown disposed only on back portion 24, they may be disposed on any suitable portion of seat liner 20.

[0033] **Figure 3** shows the internal side of front portion 30 of seat liner 20 in isolation. Front portion 30 can include one or more of the attachment mechanisms shown in **Figure 3**, as well as any other suitable attachment mechanisms. For example, attachment mechanism 50 is an elongate flexible member with a proximal end coupled to front portion 30 and a snap on a distal end to be coupled to a toy, a bottle, a pacifier, etc. In various embodiments, the elongate flexible mechanism can include, for example, a cord, a strap, a ribbon, or a strip of material.

[0034] Attachment mechanism 52 of **Figure 3** shows an elastic member (e.g., a resilient coil) attached to a toy truck. Attachment mechanism 54 shows another elongate flexible member with a hook-and-loop fastener on a distal end to releasably couple a toy to front portion 30.

[0035] **Figure 4** shows an alternative embodiment of a seat liner. Specifically, seat liner 56 includes bottom portion 58, back portion 60 coupled to bottom portion 58, right side portion 62 coupled to bottom portion 58 and back portion 60, left side portion 64 coupled to bottom portion 58 and back portion 60, and front portion 66 coupled to bottom portion 58, left side portion 64, and right side portion 62.

[0036] Similar to seat liner 20 of **Figure 1**, seat liner 56 includes leg openings 70 in front portion 66, leg protectors 72, and pocket 68 disposed on the external surface of left side portion 64. Although not shown in a separate view, back portion 60 may include some or all of the features shown in **Figures 1-2C**, such as, for example, seat belt openings, seat belt sleeves, and/or a loop to be used to secure seat liner 56 in a collapsed position with a

strap connected to front portion 66. Moreover, attachment mechanisms, such as those shown in **Figure 3**, for example, may be included on front portion 66.

[0037] Seat liner 56 has some additional features not present in seat liner 20. However, the various features may be mixed and matched in any combination. For example, seat liner 56 includes flap 76 disposed on front portion 66 so that flap 76 can extend over a handle of, for example, a shopping cart or high chair. In one embodiment, flap 76 includes elastic material extending along a length, L of flap 76, to form a snug fit around the handle.

[0038] In addition, left side portion 64 can include flap 78, and right side portion 62 can include flap 80. Flap 78 and flap 80 may also employ elastic material to snugly engage sides of a device such as, for example, a shopping cart, a high chair, or a booster seat. Both flap 78 and flap 80 can protect the occupant from touching contaminated surfaces of the device. Likewise, back portion 60 can include flap 74 to cover a rear portion of the device. In various embodiments, flap 74 can include elastic material to snugly engage the rear portion of the device and/or can have a greater length than flap 78 and flap 80 so that seat liner 56 may still be used with devices having a high back. In various embodiments, the flaps may be contiguous (e.g., flap 76 connected to flap 78) and elastic material may extend continuously through more than one flap. For example, a single band of elastic material may surround the top portion of seat liner 56. Regardless of which flaps include elastic material, in one embodiment the flaps are configured to snugly engage the device (e.g., shopping cart) so that it is

difficult for the occupant to dislodge the seat liner from the device by moving and/or pulling on the seat liner.

[0039] **Figure 5A** shows seat liner 20 of **Figure 1** disposed within seating area 84 of shopping cart 82. Although used in conjunction with a shopping cart, the various embodiments of seat liners may also be used with any other device that has a seating area that is suitable to be lined such as, for example, a high chair or a booster seat. Shopping cart 82 can include handle 88 and leg holes 86. As shown in **Figure 5A**, leg openings 34 of seat liner 20 correspond with leg holes 86 of shopping cart 82. However, in other embodiments, an exact correspondence of leg openings 34 to leg holes 86 is not necessary. It is contemplated to use any suitable configuration (e.g., size, number, and placement) of leg openings relative to leg holes so that the legs of the occupant(s) can be comfortably accommodated.

[0040] **Figure 5B** shows seat liner 56 of **Figure 4** disposed within seating area 108 of shopping cart 110. Shopping cart 110 can include a handle, which is obscured from view in **Figure 5B** by flap 76. Shopping cart 110 can also include leg holes 112. Leg openings 114 of seat liner 56 correspond with leg holes 112 of shopping cart 110. However, in other embodiments, an exact correspondence of leg openings 114 to leg holes 112 is not necessary. It is contemplated to use any suitable configuration (e.g., size, number, and placement) of leg openings relative to leg holes so that the legs of the occupant(s) can be comfortably accommodated.

[0041] **Figure 6** shows a flow chart for a method of using a seat liner to protect an occupant from contaminants. At block 90, a box-shaped seat liner is aligned with a seating

area of a device. The seat liner is then placed in the seating area at block 92. In other embodiments, an occupant is placed within the seat liner.

[0042] Once the occupant is in the seat liner within the seating area, a seat belt of the device and/or of the seat liner may be fastened around the occupant. If the seat belt of the device is used, the seat belt can be threaded through seat belt openings in a back portion of the seat liner. In another embodiment, the seat belt of the device may be threaded through one or more seat belt sleeves that can be attached to the seat liner.

[0043] **Figure 7** shows a perspective view of handle 94 with contaminant shield 96 placed thereon. In the embodiment shown, contaminant shield 96 is generally elongate and is comprised of a material suitable to protect a user from contaminants on handle 94. As used in reference to this embodiment, a user may be a person operating a device such as, for example, a shopping cart and/or an occupant placed within a seating area of the shopping cart.

[0044] **Figure 8** shows one embodiment of a contaminant shield to be placed on a handle. Contaminant shield 98 includes first end 99, second end 103, and a fastener to join first end 99 and second end 103. Although any suitable fastener can be used, the fastener shown in **Figure 8** comprises male snap members 100 and female snap members 101.

[0045] **Figures 9 and 10** show an alternative embodiment of a contaminant shield that uses a hook-and-loop fastener to join first end 105 to second end 107. Specifically, **Figure 9** shows the internal side of contaminant shield 102 with a series of hooks 104 disposed adjacent to first end 105.

Figure 10 shows the external side of contaminant shield 102 with a series of loops 106 disposed adjacent to second end 106. However, other suitable fasteners may be used along any suitable portion of the contaminant shield.

[0046] Any suitable material may be used for the seat liners and/or contaminant shields disclosed herein to help prevent contact with contaminants and/or to provide a cushioning effect to a device (e.g., shopping cart seating area and/or handle, high chair seating area and/or handle, and seating area of a booster seat). For example, material may be quilted and filled with foam, polyfill, or the like. Moreover, stain-resistant and/or water-resistant material may be used. In various embodiments, washable fabrics or materials can also be used.

[0047] It is to be understood that even though numerous characteristics and advantages of various embodiments have been set forth in the foregoing description, together with details of structure and function of the various embodiments, this disclosure is illustrative only. Changes may be made in detail, especially matters of structure and management of parts, without departing from the scope of the various embodiments as expressed by the broad general meaning of the terms of the appended claims.